

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)	Art Unit: 1645
)	
NIELSEN, Jan Clair)	Examiner: GANGLE, B.
)	
Serial No.: 10/562,421)	Washington, D.C.
)	
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For: INITIATION OF)	Docket No.: NIELSEN=6A
FERMENTATION)	
)	Confirmation No.: 5536

ELECTION WITH TRAVERSE

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S i r :

In response to the restriction requirement mailed June 23 please enter the following response.

Applicants hereby elect group I, with traverse.

PCT unity rules apply. The basis for the restriction is a posteriori lack of unity because Viljakainen et al. allegedly anticipates claim 1.

Viljakainen et al. discloses bacteria that are capable of malolactic fermentation. However, during the malolactic fermentation, Oenococcus oeni also degrade the citric acid, which normally is present in the wine at a concentration of 0.3-0.9 g/L. The catabolism of malic acid and citric acid is in general not concomitant, but sequential, i.e. the citric acid degradation is delayed compared to the malic acid fermentation (see for example Nielsen et al., 1999, Appl. Environ. Microbiol., 65:740-745 and Viljakainen and Laakso, 2000, Eur. Food Res. Technol., 211:438-442). The degree of delay is dependent on the specific bacteria and the wine. The degradation of citric acid is often undesired as the wine loses some of its fruitiness which is appreciated in most wines.

Another undesired and unavoidable effect of the citric acid

degradation by Oenococcus oeni during malolactic fermentation (MLF) is the production of acetic acid, which is one of the end products from the citric acid degradation. The acetic acid concentration in the wine may increase by 0.1-0.3 g/L during the MLF. Acetic acid is highly undesirable as it gives the wine an unpleasant vinegar flavor at higher concentration.

An important intermediary compound in the metabolism of citric acid by Oenococcus oeni is diacetyl. When present at concentration above the sensory threshold, diacetyl gives the wine a buttery aroma which is undesirable in most red wines.

There are freeze dried cultures of a strain of Oenococcus oeni commercially available which do not ferment the citric acid in the wine during the malolactic fermentation. However, the commercial cultures of this strain on the market can not be used for direct inoculation into wine as this result in a survival rate which is of no practical use.

Claim 1 limits the organisms to those which not only are capable of fermenting malic acid to lactic acid, but which "when placed in a medium containing a predetermined amount of citric acid is only capable of degrading at the most 80% of that citric acid". It is also required to meet at least one of two survival criteria for survival in fermented sterile fruit juice. These features are not disclosed or suggested by Viljakainen.

Respectfully submitted,

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